

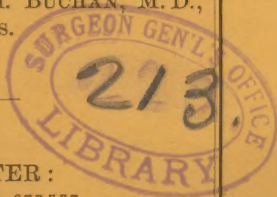
Treatise on the Cause &c
PRICE 30 CENTS. (*small pox*)

TREATISE
ON THE
CAUSE, PREVENTION AND CURE
OF
SMALL-POX.

INCLUDING
A NUMBER OF RECEIPTS
UNIVERSALLY APPROVED AND ADOPTED.

—♦—
COMPILED FROM
THE BEST MEDICAL AUTHORITY.
PROF. W. PAINE, M.D., WM. BUCHAN, M.D.,
AND OTHERS.

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W. R. CHARTER:
611 AND 613 SANSON STREET
PHILADELPHIA.
1872.



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TO THE PUBLIC.

As the object of all study, and the end of all wisdom is practical utility, so a collection of the most approved receipts may be considered a volume containing the essential of the wisdom of man worthy of preservation. This work has been compiled under the feeling that if all other books on the subject in the world were destroyed, this volume would be found to embody the results, experience, observations and discoveries of Medical Science during the past ages of the world. Theoretical reasoning and medical detail have been avoided. The object of the Compiler has been to economize his space so as to place in the hands of every one a concise history of this disease, preventive, treatment, and modes of cure. The best authorities have been resorted to, and consulted with, and where different processes of apparently equal value have been found, the most approved have been selected; besides innumerable treatises on the subject from a variety of manuscript communications from friends and connexions of the Compiler and Publisher. Every care has been taken in the printing to avoid errors, as well as to select the best receipts and remedial treatment. In conclusion, the Publisher begs leave to state, that neither time nor expense has been spared in rendering this Edition cheaper, and better calculated for practical purposes than any other published.



SMALL-POX.

OWING to the prevalence of this disease in our city and other portions of the country, we have deemed it advisable to lay before our readers all the more important facts connected with its history, symptoms, and treatment. The essay is so prepared as to be equally interesting to the profession and the people.

Small-Pox, or Variola, from the Latin *varius*, spotted, demands special consideration.

History.—The Greeks and Romans knew nothing of this disease. The first notice of any affection resembling small-pox is found in a chapter of Procopius, “De Bello Persico,” in which he describes a dreadful pestilence, which began at Pelusium, in Egypt, about the year 544, spreading towards Alexandria and Palestine. This disease was accompanied by buboes and carbuncles. It raged independently of all seasons, spreading into Persia, and through the whole interior of Asia, sparing neither age nor sex, and being peculiarly severe in pregnant

women. Whether this epidemic was really small-pox, may be doubted; but certainly, shortly afterwards, very unequivocal traces of it were met in the countries bordering on the Red Sea, for we read of caliphs and their daughters being pitted. It had certainly been known for several centuries before it was described. Rhazes, in 910, was the first author who mentioned it. From the East it travelled to the West, appearing in England towards the close of the tenth century. In 1492 it made its appearance in America, first occurring in Mexico, and in 1666 in Boston, and subsequently all over the United States.

Inoculation was first practised in 1700, at Constantinople; but it was not until Lady Mary Wortley Montague had her daughter inoculated in 1721, that the attention of the profession was called to the experiment; and even then, she could not prevail upon them to adopt it, until its utility in modifying the disease had been repeatedly demonstrated. Inoculation had a powerful influence in modifying the severity of variola; and up to the period in which vaccination was introduced by Dr. Jenner, in 1770, small-pox had become much less prevalent and essentially modified in its character. Vaccination, however, has its evils as practised at the present day. Most of the virus used by physi-

cians is that which has passed through the systems of persons affected with scrofula, cancer, phthisis, syphilis, etc. ; and from the frequency with which individuals, previously exempt from these diseases, are attacked after vaccination, we have every reason to infer that the virus is contaminated with those poisons, and, consequently, the profession cannot be too careful in procuring the genuine cow-pox, or the vaccine matter that has passed through the system of those who are entirely exempt from any constitutional contamination.

Symptoms.—The symptoms of variola are those which mark the four periods into which the disease is naturally divided.

The Period of Invasion.—This period usually occupies about three days, and is manifested by lassitude, languor, restlessness, gaping, stretching, petulant and sullen disposition, accompanied or soon followed by chills, rigor, and the usual symptoms of the cold stage of fevers. Towards evening these symptoms are succeeded by hot, dry skin, pain in the head, and scrobiculus cordis, which is increased on pressure, loss of appetite, nausea, and in some cases vomiting and lumbago. During the second and third day the sleep is disturbed with troublesome dreams and

sudden startings, with frequent horripilations, or creeping chilliness, which are soon followed by heat, fever, flushed face, occipital headache, and, in children, with frequent convulsions.

The Period of Eruption.—At the end of the third day, or on the morning of the fourth, a series of small, red, circular points, or papilæ, appear, in which form the variolous eruption first presents itself. They are not prominent above the surface in which they are seen; but, by passing the finger over them, they can be easily and distinctly felt. They are of the size of a pin's head, are round, hard, movable and rolling under the finger, and are evidently situated in the substance of the skin. These minute, isolated, tubercular tumors increase in diameter and prominency, advancing upon the surface, becoming slightly elevated above it, and gradually rising into distinct pimples. In the course of the first day, or by the time they are twenty-four hours old, they become rather globular in form, have a regularly-formed ring of inflammation at their base, and assume the appearance of rising pustules. They now go on increasing in breadth and elevation, and, on the commencement of the second day, present light, transparent specks at their summits. At the first inspection these shining, semi-pellucid specks

appear as if they were the effect merely of the distension of their cuticular covering, caused by the rising pimple pressing against it, thus presenting a polished and glistening appearance; but they are, in fact, the seat of rising vesicles, for in the course of the second day, but sometimes not until the third day, the eruption loses its papular character, and becomes visibly and truly vesicular. The vesicles are at this period, however, confined to the tops of the pimples, and contain a drop of limpid secretion. During the eruptive stages the pimples are painful when pressed; and when they have reached their vesicular state, they seem to be planted upon well-defined tubercular bases, which are perfectly distinguishable by the touch. The inflammation attending the disease is of a phlegmonous kind; and the redness, both of the pimples and skin, subsides and disappears under the finger, and on stretching the surface; but the hardness and projection of the eruption continue to be felt and seen. The true seat and structure of the eruption, during the eruptive period, have been accurately ascertained by dissection. This has established, what indeed the sense of touch and other methods of examination had indicated, that the small-pox pustule is originally formed in the substance of the cutis. The little tubercles, soon after they are formed, are discovered, on dissec-

tion, to be located in the reticular tissue of the true skin, occupying, as it were, little cells expressly formed for them. They resemble regularly formed bulbs, are reddish exteriorly, of an ash color interiorly, and are evidently cellular. If, on the second or third day after their appearance, these bulbous tubercles are divided by incision, and examined by means of a magnifying lens, a minute quantity of serous fluid may be discovered in them, retained by small, thin walls, or filamentous partitions; which have not, however, as yet the appearance of a regular and symmetrical structure. The febrile symptoms, on and during the appearance of the eruption, subside; and when the eruptive process is completed, the patient, particularly if it be a child, is frequently relieved from all the distress and uneasiness which attend the fever. The pains of the head, back, and loins, and the increased heat of the system, are much diminished, and occasionally entirely vanish. The eyes and tongue regain, in some measure, their natural appearance, the pulse becomes more regular, and the organs of digestion and of secretion resume, in a degree, their natural and healthy functions. Patients usually complain of soreness in the throat during the whole time occupied by the period of eruption, and this increases in degree as the pustules increase in size and

number. As the eruptive process goes on, the regions which are successively invaded by the pustules, gradually swell and redden; and in grown persons the eruption is very frequently attended by a profuse and constant perspiration. After the breaking out of the eruption, the pocks, on whatever part of the body they may exist, pursue the same march, varying a trifle, perhaps, in appearance, in different regions, according as the texture of the skin differs in thickness and vascularity, and by the time those which first appeared become vesicular, those which succeed them are in different stages of progress, and the eruption consequently presents a variegated and multiform appearance. The pimples, after having passed into the vesicular form, as already described, increase in diameter and elevation; and by the fourth day the tubercles seem to have emerged entirely from the substance of the skin, and are quite prominent above, and are situated, as it were, upon its surface. Their whole superficies are now converted into a vesicle, which fills and assumes a rounded or hemispherical form, presenting soon a slight depression in the centre. This depression varies in degree in different pustules. In some it is quite evident, while in others it is hardly perceptible, or does not exist. It is usually considerably deep in the eruption on the face, while that on the extremity

remains rounded and globular. When the depression does exist, it is produced by an adhesion of the cuticular membranes to the inflamed cutis, in consequence of the effusion of coagulable lymph; which also forms a cyst to confine the matter, and thickens the rete mucosum and cuticle. The pustules, which are now of a pearl or ivory color, are surrounded by a red circle, and measure from one to two lines in diameter. They are tender on pressure, and are still distinguished by hard tubercular bases. They subside, but do not disappear, on pressure, or by distending the parts in which they exist. Their bases, however, communicate a hardness and resistance to the touch, whilst their superficies are comparatively soft and yielding. These peculiarities, however, are not common to all of the pustules at this epoch; some of them more readily give way under pressure, and are more yielding and elastic than others, owing, probably, in part to a greater comparative quantity of secreted fluid which distends them, and to some difference in the compactness of the texture in which they are situated. Dissection of the pustules, on the fifth or sixth day of their age, demonstrates that their structure is cellular, and that the cells are filled at this period of their progress with a diaphanous secretion, and that they are separated from each other by thin par-

titions, which converge to a central point. This structure is easily recognized in the superior portion of the pustule, by dividing it by a transverse incision from above downwards. The structure of the lower or deep-seated portion of it is more dense and compact; but is still cellular, and is of a deeper color than the superior, and contains a little fluid. In puncturing the pustules at this time, the secreted matter will usually flow out at once; which shows that although it is contained in cells, yet these are not distinct from each other, but that there is a free opening and communication among them. The pustules vary considerably in size, age, and general appearance. When about five days old, they are hemispherical in shape, are bounded by a red circle, and their fluid contents gradually assume an opaque and turbid appearance. While these changes are taking place in the pustules, which are the first to break out, those which succeed them gradually pass through the same changes, and the parts which are thickly studded with them inflame and swell, and frequently acquire a damask rose color. As the pustules increase in size, and become filled with matter, the immediate spaces inflame, and become infiltrated with effused lymph, which occasions some general swelling of the cutaneous surface. The eyelids are the parts which first

begin to swell, and they frequently swell to so great an extent as to close the eyes, and produce temporary blindness. In some instances, they are so much infiltrated and distended, that they resemble shining, inflated bladders, drawn over the eyes. The other parts of the face soon swell in proportion, and present a polished and bright red surface. The swelling of the face is sometimes so extensive, that its general outlines are completely destroyed, and the peculiar features of the individual are no longer to be recognized. Immediately after, the face, the hands, the fingers, the body, and the feet swell in proportion to the number of pocks which are on them. The whole head is, at the same time, tender and painful, and it is with much suffering that the patient raises or moves it.

Period of Suppuration.—As soon as the suppurative process takes place, the surfaces of the pustules begin to lose their smooth and semi-transparent aspect, and to grow rough and whitish. This is the first sign of commencing suppuration. As maturation proceeds, the complexion of the pustules continues to grow more opaque, and to assume successively a milky and light straw, or cream color. During this process, small, well-defined, circular specks, darker than the rest of the surface, appear in the mid-

dle of most of the pustules. These little specks, on the first formation, are rendered very apparent by means of a magnifying lens, and the cuticle which covers them appears somewhat dry, and slightly scaly. They increase in size, from the centre to the circumference, until the whole superficies of the pustules assume, in a measure, the same opaque and purulent appearance, and until desiccation actually commences. At this period of their progress, the pustules cease to communicate that resistance to the touch which distinguishes them during their vesicular state; and, instead of feeling firm and hard, they are now comparatively soft, and the matter in them evidently fluctuates under the pressure of the finger. The fever, which subsided on the breaking out of the eruption, re-appears at the commencement of suppuration, and rages with greater or less violence till desiccation takes place. It is announced by chills, which are succeeded by heat, headache, quick and hard pulse, thirst, furred tongue, by a disposition to sleep, coma, and sometimes delirium. The parts which are the most thickly studded by the pustules, are commonly the most swollen, inflamed, and painful. The hands and feet of children usually swell considerably, even when there are but few pustules on them, and adults are almost constantly troubled with a free, and frequently a

profuse salivation. The secretion of saliva is attended with hoarseness and pain, and a peculiar and very disagreeable odor. The urine is commonly high-colored and muddy; and the dejections are frequent and liquid in children, while in adults they are often suppressed and hard. The general symptoms continue with varied severity, until the pustules on the different regions of the body become entirely matured, and commence to desiccate. The pustules on the face, or those which first break out, are the first in which suppuration commences, and are soonest completed. Those on the extremities are the last to suppurate. As the pustules on the different regions, and even on the same parts of the body, do not pass into their suppurative stage all at the same moment, but at different times and in succession, the eruption consequently exhibits a variegated appearance at the time that the oldest pustules are in a state of complete suppuration. As soon as desiccation commences in the pustules, the febrile symptoms abate, and vanish as the process of scabbing proceeds. The areolæ surrounding the pustules, and the swelling and turgescence of the parts on which they exist, decline, and soon disappear. The scabs fall from the face from the twelfth to the fifteenth day after the appearance of the eruption, and from the fifteenth to the eighteenth

from the commencement of the febrile attack. In the course of two or three days more, the scabs on the other parts of the body fall off. Such are the usual symptoms and appearances of small-pox in its distinct form.

Variola Confluens.—In the other form of the affection, however, which is called *variola confluens*, the pustules are very numerous and run together. The feverishness is infinitely more violent, and rather of a typhoid character; the pulse is not as strong, the patient is exceedingly weak, and there is delirium. There is often so violent an affection of the head that coma is produced; and the eruption not unfrequently begins early, even on the second day. The pustules are not only far more numerous, but they are smaller, flaccid, and not filled as they should be. Their quality, also, is bad; for instead of containing a creamy, “laudable” pus, the contents are brown, perhaps thin and serous; or there may be a brownish, ichorous fluid. They not only run together, but, from not being well filled, appear more or less flat.

Attendant Symptoms.—The feverishness, in this form of the disease, is very little lessened on the appearance of the pocks; and at the end of the eruption is very much aggravated.

Secondary fever, of a very violent character, now commences. The symptoms occurring in other parts are also very severe. There is much more running from the mouth and inflammation of the fauces than in the distinct form; and in infants there is sometimes violent diarrhœa. In this latter instance the lower part of the alimentary tract suffers great irritation. Frequently, too, between the pustules there are petechiæ, vibices, and ecchymoses. Sometimes there is bloody urine, and occasionally blood appears in the evacuations. The secretions are very unhealthy, and there is an exudation all over the body, so that the person emits a very offensive odor. Now and then patients laboring under this form of the disease die rather suddenly. The consequences of this species of the disease, too, are more severe than in the other form. In fact, it is "*variola confluens*," that, for the most part, leaves such terrible consequences; such as blindness, phthisis, and diarrhœa; the latter of which ends in ulceration of the intestines.

Complications.—Such are the ordinary phenomena of the natural small-pox, in its distinct and confluent forms, when it occurs in persons previously in good health, and of sound constitution. But it must be remembered that this disorder may attack those who are laboring, at

the time of seizure, under some other disease, such as pneumonia, whooping-cough, hepatitis, or consumption; and farther, that these and other disorders may come on unexpectedly at any period, early or late, during the progress of small-pox. An infinite variety of accidental symptoms may thus be superadded to the regular ones already enumerated. Small-pox may occur in persons of a weak habit, or in constitutions exceedingly exhausted, and unable to cope with a disease of such severity. It may occur, for instance, in those who have but recently recovered from a severe typhus or scarlet fever. In these circumstances we observe a very tardy eruption, collapse without advance or eruption; or, in a case somewhat more favorable, an abundant formation of large blebs containing a thin ichor, with a very tedious and hazardous period of convalescence. To this latter form of the disease the old writers gave the name of the "*watery*, or *bladder-pock*."

The disease rarely occurs more than once; and although we may all see instances of its secondary appearance, yet these are exceptions to the general rule. Like measles, however, and scarlatina, it *may* occur more than once.

Co-existent with Measles.—It was a dogma of John Hunter, an assertion without

proof, that no two specific diseases could exist at the same time in the same body ; but this is untrue. We see persons laboring under itch and syphilis at the same time ; and there are plenty of instances on record of small-pox co-existing with measles and cow-pox, though, in general, one disease runs its course in the body, and then the other. It is mentioned in the “Edinburgh Medical Commentaries” that measles and small-pox occurred simultaneously in sixteen children. Out of forty-three children who were inoculated, sixteen were at the time laboring under measles, and both the diseases went on together. This occurrence took place at the Foundling Hospital, in Dublin.

Effects.—Pustules frequently form around the eyes and on the cornea itself, and there is often ophthalmia, which not unfrequently, in the violent forms of the disease, produces albugo or staphyloma. Formerly a great number of persons were rendered blind by small-pox. When the disease is over it frequently leaves scrofula. Persons may have enlarged glands of the neck, or of the mesentery, or they may have phthisis. Frequently it leaves rupia and ecthema. Diarrhœa, too, often follows, and the mucous membrane of the intestines assumes a chronic inflammation.

Cause.—The cause of variola is universally admitted to be a specific contagion. It is one of the most contagious of diseases, and may be communicated by inoculation, or by a miasm emanating from the body. There are very few, not protected by vaccination, or a previous attack of the disease, who are not liable to be seized upon exposure. Even the foetus, in utero, may be affected along with the mother. A very transient and slight exposure very often produces it. Thus, it is frequently taken by passing persons in the street, in churches, halls, or public conveyances, who have been recently affected. It is communicated in all stages, but most particularly so during those of suppuration and desiccation. The contents of the vesicles, pustules, and the scabs formed by the latter stage, contain the virus, and the miasm not only emanates from the cutaneous surface, but from the expired breath. Some suppose that the odor is connected with the contagious effluvia. The contagious principle attaches itself to clothing, which retains it for months, when confined; but it is easily dissipated in the air so as to become inert.

The susceptibility to the disease exists in all ages, but is greatest in children. One attack protects the system, generally, from any subsequent one, although it cannot be denied that

fatal cases often occur, in which the disease has appeared twice or even a third time.

Diagnosis.—The diagnosis of small-pox presents no difficulty after the characters of the eruption are fully presented. The only diseases with which it is likely to be confounded are measles and chicken-pox; but the eruption of measles is less prominent, and does not pass on to a vesicle and pustule, as in small-pox. The duration of the eruption, in chicken-pox, is shorter, and the vesicles do not present an umbilicated appearance, as is the case in variola.

Morbid Appearances.—There is softening of the undermost layers of the cuticle, and at a later period, destruction of the connection with the cutis. The pit or umbilicus is produced by the retention of the cuticle by the excretory ducts of the cutaneous glands, and never exists in pocks seated on the palm of the hand, or sole of the foot. On the base of the pock, and, consequently, on that base of the cutis, the orifice of the gland can be seen. The portion of the surface of the cutis, not covered with pocks, is in a morbid state. The vessels at the base of the pock exhibit marks of inflammation; those at its circumference, congestion. The cutaneous glands are usually swollen; the mucous mem-

branes often exhibit inflammation, with the formation of vesicles and ulcers. Vesicles and superficial excoriations are found on the tongue. The glands on the pharynx and back part of the mouth are much distended, and have very wide orifices. There is softening of the epithelium of the œsophagus, rising into pustules, and, at a later period, it is entirely destroyed. Ulcers occur in the œsophagus, the mucous membrane of the nasal fossæ, larynx and trachea. In the latter, vesicles often form. On the pharynx, back part of the mouth, stomach and intestinal canal, pocks are never found; but there is often destruction of the papillæ of the mucous membrane, particularly of the small intestine. The mucous membrane of the genital organs is free from pocks, excepting at its junction with the external skin. In a few cases, an eruption was found on the serous covering of the spleen and liver.

Prognosis.—In distinct small-pox, occurring in patients of good habits, the prognosis is generally favorable. In the confluent form, however, the danger is always considerable. A favorable prognostic is a regular course of the disease, without serious inflammatory or malignant complications. The signs which may be looked upon as especially unfavorable, are ex-

cessive lumbar pains, the continuance of vomiting after the eruption appears, violent delirium, coma or convulsions, in the first stage, great abundance and confluence of the eruption, a want of redness about the pock, a livid or purplish color of the pustule, sudden disappearance of the swelling of the face, and salivation, and the absence of swelling in the hands and feet when the eruption is copious, great hoarseness, difficult respiration, hemorrhages, suppression of urine, involuntary discharges, etc., etc.

The disease is more fatal in children and in advanced life, than in the intermediate stages. Plethora and debility are both unfavorable indications. The disease is always dangerous in pregnancy, and abortion not unfrequently occurs. Patients may die at any period from the time of invasion to the fifth or sixth week. From Dr. Gregory's observations, it appears that the greatest number die on the eighth day.

Treatment.—Heretofore, the treatment of small-pox has not only been comparatively unsuccessful, but much diversity of opinion existed as to the course to be pursued. As we have already stated, small-pox is produced by a specific poison, introduced into the system, and circulating with the blood. It is this *materies morbi* that nature attempts to eliminate through

the skin, and other emunctories of the body. To assist her efforts, we should give an active purge of podophyllin or some anti-bilious physic, followed by a thorough spirit sweat. This can be done by placing the patient on a Windsor chair, with two blankets, one applied in front, and the other to the back, a cupful of alcohol placed under the chair, and set on fire, and allowed to burn until free perspiration is produced. After the sweat, the patient should be thoroughly sponged, wiped, and placed in bed, and thirty grains of triturated macrotin added to a tumbler half full of water, and one teaspoonful given every half hour, or hour. If there is fever, aconite or veratrum should be given. If inflammation of the fauces should prove a troublesome symptom, a mild solution of the chlorate of potash and hydrastis should be used as a gargle. In some cases, when the angina is very severe, in addition to the gargle, I have found hot packs, applied to the throat, of much benefit; and when the disease assumes a confluent and an erysipelatous character, quinine and muriated tincture of iron are valuable remedies. A prescription that I have been in the habit of using, is as follows:—Take tincture of muriate of iron, one drachm; quiniæ sulphas, ten grains, syrup simplex, three ounces. Mix. Dose,—One teaspoonful every two hours.

During the entire progress of the disease, the body should be thoroughly sponged once a day, and wiped dry ; afterwards, the following applications should be made to all portions of the surface where there are pustules or symptoms of inflammation:—Take creosote, thirty drops ; olive oil, one pint.

It is now very evident that small-pox is prevailing in nearly all portions of the country, and as yet there is no very definite plan of treatment adopted by physicians.

Homeopathic physicians rely on small doses of medicine, a low diet, and pure air. The mortality in their treatment, so far as we can gather the facts, is about six per cent. Each practitioner maps out his own course. In conversing with a large number of respectable Homeopathic physicians we find that no two of them adopt the same course or use the same remedies. Some depending principally on aconite and belladonna, others on aconite and saracenia, while others change their medicines according to the symptoms presented, and in each case the result is nearly the same.

The Old School are equally uncertain in their treatment. Many depend altogether on saline draughts, such as quinine and opium powders ; some give quinine and mild preparations of mercury ; others depend principally upon iodide of po-

tassium; while another class regard the muriate tincture of iron as the only remedy of value. Some recommend and give stimulants, while others are vigorously opposed to everything of the kind, and confine their treatment entirely to the cooling method.

Thus by examining the prescriptions of the various Old School practitioners of our city, we notice they have no systematic plan of treatment. Notwithstanding this their success is nearly the same, and will average with that of the Homeopaths—being about six per cent.

From these facts it appears that there is no systematic plan of treatment, and it is quite doubtful whether any course of practice as now pursued by all classes of physicians outside of the proper attentions to diet, ventilation, and cleanliness has any modifying influence on the disease. One thing is sure, that no one form of treatment, as pursued by ordinary sectarian physicians, has any special advantage over another. The question then arises: What can be done? Is there any treatment that the practitioner is warranted in adopting?

Let us look at the disease. All agree that it is a poison in the blood; that nature is endeavoring to expel it through the skin and other avenues of the system. The question then naturally arises, how, and in what way can we assist,

in the efforts? The plan that I have adopted is, as soon as the patient is seized with a chill to place him in a chair, wrap him in blankets, and burn alcohol under the chair until a free perspiration is produced, allowing cold water to be drunk freely during the sweat. As soon as the sweat is over wrap him in the hot blankets and put him in bed. Add two ounces of the tincture of lobelia to one quart of warm composition tea, and give a teaspoonful every ten or fifteen minutes until a thorough emetic is produced.

After the effects of the emetic are over, wash the patient in strong, hot soda-water; then give a teaspoonful of anti-bilious powder every two hours until it acts as a purge. After the action of the cathartic, bathe the whole body in equal parts of sweet oil and lime-water, applying it freely. The soda-water, and lime-water and sweet oil should be used once or twice a day. Change all the clothing once a day, and allow all the fresh air possible. Then give the following:—quinine, ten grains; prussiate of iron, ten grains; macrotin, five grains. Mix, and make ten powders, giving one every two hours until all are taken.

When they have all been used, give a tablespoonful of the strong tea of the pitcher plant every hour, and one-half teaspoonful of the elixir of macrotys every two hours. Allow all the boiled

milk the patient requires with a little mutton chop or broiled beef and bread, if the appetite craves it, two or three times a day; if it should not crave it, from one to three quarts of good fresh milk should be taken by the adult every twenty-four hours.

On the seventh day, when the disease assumes a protracted form, the quinine and iron should be repeated, and if constipation exists, should be followed by a very mild purge. In cases of feeble persons and children, a hot bath of strong soda-water may be substituted for the rum sweat, and smaller doses of medicine given, although the same plan of treatment should be adopted.

The pitting can be prevented by keeping the face covered with oiled silk, and lime-water and oil, so as to prevent the action of air; and when the pustules occur in the mouth or throat, they should be destroyed by applying the muriate tincture of iron. In the great majority of cases thus treated, the disease is so modified as not to assume any violent character, and in no instance have I known of a fatal result, when the treatment was applied in the early stages. The object of this plan of treatment, it will be noticed, is to assist nature to eliminate the poison through the natural outlets of the body. The poison, as fast as thrown out through the skin, is caught in

the oil and lime-water, and is removed by the washing, while the other remedies maintain the strength of the patient, stimulating the liver, kidneys, and bowels to assist in the discharge of the poison. In all ordinary cases nature will cure the disease when thus assisted. Of course the treatment must be modified to apply to all cases, as every intelligent physician would do; and further, other remedies will be required to meet certain complications, but these should in no way interfere with the general plan of treatment.

VACCINATION, OR COW - POX.

VACCINA.

Vaccina, or Cow-Pox, is a variety of exanthematous disease communicated by inoculation or vaccination, and characterized by the existence of one or more umbilicated vesicles upon the skin, serving materially to destroy the susceptibility of the system to the contagion of small-pox in the majority of cases, and in those in which it does not offer complete protection, rendering them mild and free from danger. The origin of the disease is not quite certain. It has been supposed to have originated in the horse, and communicated to the cow, and from the latter to man. But it is more probable that it results from the variolous disease communicated from man to the cow, and producing it in a modified form of the affection, which in man is very destructive. It having once occurred in the cow, may be transferred to human beings by

the application of the virus to a slight wound of the skin. The operation for its communication is vaccination, for the employment of which, as a preventive to small-pox, the world is indebted to Dr. Jenner, who, after a series of observations and experiments which had occupied his attention for twenty years, promulgated the discovery in 1798. This practice of vaccination met with much hostility at first; but the discoverer lived to see it triumph over all opposition, and to witness its beneficent results. In 1799, it was introduced into this country by Benjamin Waterhouse, of Boston, the first professor of medicine in Harvard College.

Symptoms.—The symptoms in the cow are very slight, producing some febrile excitement, and on the third or fourth day minute pocks appear upon the teats, and sometimes on the eyes and nose, which enlarge gradually, assuming the umbilicated appearance, and arriving at their height, begin to desiccate on the eleventh or twelfth day after their first occurrence.

To produce the disease in man matter should be taken from the pustule on the teat of the cow, or from a healthy child, in which the virus has previously been inserted. Very soon after the matter has been introduced a little inflammation arising from the puncture may be seen at the

spot ; but this disappears, and nothing is left but a slight trace of the incision. On the third day after vaccination, the operation being generally performed on the arm, near the insertion of the deltoid muscle, small papulæ are visible, which on the following day are more developed and reddened. On the fifth day vesicles are observable, which are umbilicated at the top, and contain a colorless, transparent, viscid fluid, called the vaccine lymph. On the seventh day the vesicles are tolerably well formed, presenting a shining appearance, and on the eighth a red areola is visible, extending from two to three inches around the pocks, increasing in redness until the ninth or tenth day, at which time the pustule is perfected, being elevated from two to three lines, measuring one-third of an inch in diameter, slightly umbilicated, and having a small brown scab in the centre.

About the fourth day after vaccination there may be some febrile excitement, and when the pustules are perfect there are often pain, pruritus, restlessness, swelling of the lymphatic glands of the arms, and enlargement and tenderness of those of the axilla. On the tenth or eleventh day the febrile movement subsides, and the areola becomes faded. A dark spot appears at the centre, and gradually extends over the whole of the pocks. The pustules desiccate, and by the

fifteenth day nothing remains of the pocks except black, hard scabs, which fall off generally during the third or fourth week, leaving an oval scar.

While this is the general course of vaccina, it is liable to great diversity, the symptoms being much more severe in some cases. Sometimes there is no perceptible fever, little pain or irritability during the stage of suppuration; while in others, along with considerable fever, the local affection is very severe, the areola extending over the whole arm, or even beyond it, with much swelling and pain, assuming almost the form of erysipelas.

If the vaccine matter be inserted at different points, so that the areolæ of the pocks run into each other, the most violent inflammation and gangrene may ensue. The virus should never be inserted in more than one place at a time, unless it be done so closely that only one pock will form. Vaccination may be performed almost at any age, after the second or third month of infancy, and should always be attended to in early childhood, and repeated every six or seven years, or on the appearance of any epidemic. Females should never be vaccinated in pregnancy, excepting where the exposure to variola is endangering life.

Diagnosis.—To distinguish *vaccina* from the spurious affections which sometimes result from vaccination, is of the greatest importance. No pustule should be pronounced genuine unless it has an incubation of from two to four days; then a pimple, which passes on to a vesicle by the sixth day, having an umbilicated appearance, and all the other essential points which I have enumerated. The inflammation in the spurious sores commences earlier than in the genuine. They progress more rapidly, are irregular in shape, lack the central depression, scab early, are likely to bleed on a slight injury, and the vesicles are fragile, breaking easily, and leaving a soft, yellowish crust.

Anatomical Characters.—When the vaccine vesicle is dissected upon the ninth day, there may be noticed a small portion of pus at the umbilicated depression in the centre, beneath a scale of the cuticle. When this is removed, the whole vesicle has a shining appearance, and upon being opened, is found to contain a colorless, viscid, and inodorous limpid fluid, in small cells, arranged concentrically in two rows, and formed in a pseudo-membranous product, which has been thrown out between the cutis vera and the epidermis.

The *prognosis* is always favorable, excepting

when violent inflammation and gangrene occur in the arm, which need not ensue, if the vaccine matter be inserted at only one point at a time.

Method of Vaccination and Treatment.—The best period is when the child is from three to six months old. This should be accomplished by securing a lymph from a cow-pox pustule, on a healthy person, when the pock is about four or five days old. Then take a sharp lancet, and make frequent scarifications through the cuticle, and allow the arm to be exposed until all the blood that will, flows from the superficial capillaries; then wipe the scarified portion with a soft sponge or cloth, and apply the lymph by means of the point of the lancet. If the pure lymph from the udder of the cow can be obtained, all the better. All the after-treatment that is necessary, is to notice the symptoms; and if there be fever, give a few doses of aconite, a warm bath, or such other remedies as the case may indicate.

The importance of vaccination should be fully impressed upon the attention of those who have children in charge; and in case that this almost positive use of preventing the disease has not been resorted to before the adult age, it should be then. The only important thing to be attended to, is to see that the virus is of a pure character,

free from scrofula, syphilis, and other infectious and contaminating diseases. The idea that vaccination exhausts itself in the course of a few years appears to be well founded. This is especially the case about the age of puberty—hence, re-vaccination should be resorted to as often as once in seven or eight years, until the age of fifty.

THE FOLLOWING TREATMENT FOR THE CURE OF SMALL-POX

Is Most Approved During the Present Epidemic.

THE small-pox is commonly caught by infection. Since the disease was first brought into Europe the infection has never been wholly extinguished, nor have any proper methods, as far as I know, been taken for that purpose; so that now it has become in a manner constitutional. Children who have overheated themselves by running, wrestling, etc., or adults, after a debauch, are most apt to be seized with the small-pox.

This disease is generally divided into four different periods, viz.: the fever which precedes the eruption, the eruption itself, the suppuration or maturation of the pustules, and the secondary fever.

Little more is necessary during the primary fever than to keep the patient cool and quiet, allowing him to drink diluting liquors, and bathing his feet frequently in warm water

Though this be generally the safest course that can be taken with infants, yet adults of a strong constitution and plethoric habit sometimes require bleeding. When a full pulse, a dry skin, and other symptoms of inflammation renders this operation necessary, it ought to be performed; but, unless these symptoms are urgent, it is safer to let it alone; if the body is bound, emollient clysters may be thrown in.

If there is a great nausea or inclination to vomit, weak camomile tea or lukewarm water may be drunk, in order to cleanse the stomach. At the beginning of a fever nature generally attempts a discharge either upwards or downwards, which, if promoted by gentle means, would tend greatly to abate the violence of the disease.

Though every method is to be taken during the primary fever by a cool regimen, etc., to prevent too great an eruption, yet, after the pustules have made their appearance, our business is to promote the suppuration by diluting drink, light food, and if nature seems to flag, by generous cordials. When a low, creeping pulse, faintishness, and great loss of strength render cordials necessary we would recommend good wine, which may be made into negus, with an equal quantity of water, and sharpened with the juice of orange, the jelly of currants, or the like. Wine-whey, sharpened as above, is likewise a proper drink in

this case; great care, however, must be taken not to overheat the patient by any of these things. This, instead of promoting would retard the eruption.

The rising of the small-pox is often prevented by the violence of the fever; in this case the cool regimen is strictly to be observed. The patient's chamber must not only be kept cool, but he ought likewise frequently to be taken out of the bed, and to be lightly covered with clothes while in it.

Excessive restlessness often prevents the rising and filling of the small-pox. When this happens gentle opiates are necessary. These, however, ought always to be administered with a sparing hand. To an infant a teaspoonful of the syrup of poppies may be given every five or six hours till it has the desired effect. An adult will require a tablespoonful in order to answer the same purpose.

If the patient be troubled with a strangury or suppression of urine, which often happens in the small-pox, he should be frequently taken out of bed, and, if he be able, should walk across the room with his feet bare. When he cannot do this he may frequently sit on his knees in bed, and should endeavor to pass his urine as often as he can. When these do not succeed, a teaspoonful of the sweet spirits of nitre may be oc-

casionally mixed with his drink. Nothing more certainly relieves the patient, or is more beneficial in the small-pox, than a plentiful discharge of urine.

If the mouth be foul and the tongue dry and chapped, it ought frequently to be washed, and the throat gargled with water and honey, sharpened with a little vinegar or currant-jelly.

During the rising of the small-pox it frequently happens that the patient is eight or ten days without a stool. This tends not only to heat and inflame the blood, but the fæces, by lodging so long in the body, become acrid, and even putrid, from whence bad consequences must ensue. It will therefore be proper, when the body is bound, to throw an emollient clyster every second or third day through the whole course of the disease. This will greatly cool and relieve the patient.

When petechiæ, or purple, black, or livid spots appear among the small-pox, the Peruvian bark must immediately be administered in as large doses as the patient's stomach can bear. For a child two drachms of the bark in powder may be mixed in three ounces of common water, one ounce of simple cinnamon water, and two ounces of the syrup of orange or lemon. This may be sharpened with the spirits of vitriol, and a table-spoonful of it given every hour. If it be given

to an adult in the same form, he may take at least three or four spoonfuls every hour. This medicine ought not to be trifled with, but must be administered as frequently as the stomach can bear it, in which case it will often produce very happy effects. I have frequently seen the petechiæ disappear, and the small-pox, which had a very threatening aspect, rise and fill with laudable matter by the use of the bark and acids.

The patient's drink ought likewise, in this case, to be generous, as wine or strong negus, acidulated with spirits of vitriol, vinegar, the juice of lemon, jelly of currants, or such like, His food must consist of apples, roasted or boiled, preserved cherries, plums, and other fruits of an acid nature.

The bark and acids are not only necessary when the petechiæ or putrid symptoms appear, but likewise in the lymphatic or crystalline small-pox, where the matter is thin and duly prepared. The Peruvian bark seems to possess a singular power of assisting nature in preparing laudable pus, or what is called good matter; consequently it must be beneficial both in this and other diseases, where the crisis depends on a suppuration. I have often observed where the pocks were flat, and the matter contained in them quite clear and transparent, and where at

first they had the appearance of running into one another, that the Peruvian bark, acidulated as above, changed the color and consistence of the matter, and produced the most happy effects.

When the eruption subsides suddenly, or, as the good women term it, when the small-pocks *strike in*, before they have arrived at maturity, the danger is very great. In this case blistering-plasters must be immediately applied to the wrists and ancles, and the patient's spirits supported with cordials.

Sometimes bleeding has a surprising effect in raising the pustules after they have subsided; but it requires skill to know when this is proper, or to what length the patient can bear it. Sharp cataplasms, however, may be applied to the feet and hands, as they tend to promote the swelling of these parts, and by that means to draw the humors towards the extremities.

The most dangerous period of this disease is what we call the secondary fever. This generally comes on when the pocks begin to blacken, or turn on the face; and most of those who die of the small-pox are carried off by this fever.

Nature generally attempts, at the turn of the small-pox, to relieve the patient by loose stools. Her endeavors this way are by no means to be counteracted, but promoted, and the patient at

the same time supported by food and drink of a nourishing and cordial nature.

If, at the approach of the secondary fever, the pulse be very quick, hard, and strong, the heat intense, and the breathing laborious, with other symptoms of an inflammation of the breast, the patient must immediately be bled. The quantity of blood to be let must be regulated by the patient's strength, age, and the urgency of the symptoms.

But in the secondary fever, if the patient be faintish, the pustules become suddenly pale, and if there be great coldness of the extremities, blistering-plasters must be applied, and the patient must be supported with generous cordials. Wine and even spirits have sometimes been given in such cases with amazing success.

As the secondary fever is in a great measure, if not wholly, owing to the absorption of the matter, it would seem highly consonant to reason, that the pustules, as soon as they come to maturity, should be opened. This is every day practised in other phlegmons which tend to suppuration; and there seems to be no cause why it should be less proper here. On the contrary, we have reason to believe that by this the secondary fever might always be lessened, and often wholly prevented.

The pustules should be opened when they be-

gin to turn of a yellow color. Very little art is necessary for this operation. They may either be opened with a lancet or a needle, and the matter absorbed by a little dry lint. As the pustules are generally first ripe on the face it will be proper to begin with opening these, and the others in course as they become ripe. The pustules generally fill again, a second or even a third time; for which cause the operation must be repeated, or rather continued as long as there is any considerable appearance of matter in the pustules.

We have reason to believe that this operation, rational as it is, has been neglected from a piece of mistaken tenderness in parents. They believe that it must give great pain to the poor child; and therefore would rather see it die than have it thus tortured. This notion, however, is entirely without foundation. I have frequently opened the pustules when the patient did not see me, without his being in the least sensible of it; but suppose it were attended with a little pain, that is nothing in comparison to the advantages which arise from it.

Opening the pustules not only prevents the reabsorption of the matter into the blood, but likewise takes off the tension of the skin, and by that means greatly relieves the patient. It likewise tends to prevent the pitting, which is a matter

of no small importance. Acrid matter, by lodging long in the pustules, cannot fail to corrode the tender skin; by which many a handsome face becomes so deformed as hardly to bear a resemblance to the human figure.

It is generally necessary, after the small pocks are gone off, to purge the patient. If, however, the body has been open through the whole course of the disease, or if butter-milk and other things of an opening nature have been drunk freely, after the height of the small-pox, purging becomes less necessary; but it ought never wholly to be neglected.

For very young children, an infusion of senna and prunes, with a little rhubarb, may be sweetened with coarse sugar, and given in small quantities till it operates. Those who are further advanced must take medicines of a sharper nature. For example, a child of five or six years of age may take eight or ten grains of fine rhubarb in powder over night, and the same quantity of jalap in powder next morning. This may be wrought off with fresh broth or water-gruel, and may be repeated three or four times, five or six days intervening between each dose. For children further advanced, and adults, the dose must be increased in proportion to the age and constitution.

When imposthumes happen after the small-

pox, which is not seldom the case, they must be brought to suppuration as soon as possible, by means of ripening poultices; and when they have been opened, or have broke of their own accord, the patient must be purged. The Peruvian bark and a milk diet will likewise be useful in this case.

When a cough, a difficulty of breathing, or other symptoms of consumption, succeed to the small-pox, the patient must be sent to a place where the air is good, and put upon a course of ass's milk, with such exercise as he can bear.

R E C E I P T S.

The following receipts are those which have been used in the practice of eminent physicians in the prevention and cure of small-pox:

Sarracenia.—The plant named *Sarracenia*, in honor of an eminent physician of Lyons, Dr. Sarragin, who first imported it into France, is indigenous to the Northern part of the United States. It has long been known as the best remedy in cases of varioloid, having been successfully used by the Indians, and afterward by our physicians. The fact that more than five hundred cases have recently been cured by it in

Bourges, France, has attracted much attention to the root, and occasioned further researches into its properties. It is to Dr. Frederick Morris, of Halifax, that we owe most of our knowledge of this valuable plant. The *Sarracenia purpurea* grows wild in the swamps of Nova Scotia, and at the proper season the root is gathered and preserved for use. However alarming and numerous the eruptions on the body of the patient, the action of this remedy is such that there is rarely the least scar left to tell of the ravages of the fearful disease. No other medicine reaches the disease in the same effective manner. The principle of the plant, by its contact with the virus in the blood, renders that virus inert and inoffensive. This can be shown by the fact that if vaccine or varioloid matter be moistened with a decoction of sarracenia it is at once deprived of all contagious properties. Dr. Morris pronounces it to be a sovereign remedy in cases of small-pox, just as quinine is so effective in its cures of fevers, or as belladonna is a remedy in scarlatina. The Indians look upon the plant as a preventive, and often keep a decoction of it in camp, of which they occasionally partake for the sake of purifying the blood. Dr. Morris has confirmed the truth of this action by prescribing it for persons who were exposed as nurses to the contagion of small-pox. It is to be had from our

apothecaries in several forms, more particularly as a simple decoction and as a syrup.

A Small-pox Remedy.—Herewith is appended a receipt which has been used in a hundred cases. It will prevent or cure the small-pox, though the pittings are filling. When Jenner discovered cow-pox in England, the world of science hurled an avalanche upon his head; but when the most scientific school of medicine in the world—that of Paris—published that receipt, as a panacea for small-pox, it passed unheeded. It is as unfailing as fate, and conquers in every instance. It is harmless when taken by a well person.

It will also cure scarlet fever. When learned physicians said that the patient must die, it cured:—Sulphate of zinc, one grain; fox-glove, (*digitalis*), one grain; half a teaspoonful of sugar. Mix with two tablespoonfuls of water. When thoroughly mixed, add four ounces of water. Take a spoonful every hour. Either disappears in twelve hours. For a child, smaller doses according to age. If countries would compel their physicians to use this, there would be no need of pest-houses. If you value advice and experience, use this for that terrible disease.

Dr. Sanson makes favorable mention of the sulpho-carbolate of sodium—the dose varying

from twenty to sixty grains—in cases of diphtheria, scarlet fever, variola, ulceration of the tonsils, erysipelas of the face, etc. No case which has come under his care has proved fatal with its use. It can be dissolved in water, and has no unpleasant taste.

V A C C I N A T I O N .

Symptoms attending a proper Vaccination.—In order to have vaccination protective against small-pox it must produce the following constitutional symptoms:—Slight pain in the head; aching of the muscles; chilly sensations, and some fever, together with the development of a well-defined pustule, which will appear first, as a small blister, then fill with a grayish lymph, will dry and become of a mahogany color, and, upon scaling off, will leave a pit. Inflammation may appear around the pustule, but as that occurs frequently as the result of the scarifying, it is not a positive indication that the vaccine disease has been perfectly developed. If the vaccination has been perfect, the system is as much protected as it can be, and observation proves that it is a preventive of small-pox in ninety-three cases out of one hundred, and in the remainder it modifies it.

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